Galilee. These fishes are perch-like in form and affinities, so much so that the average American angler, especially if a small boy, would call them perches. However, ichthyologists to-day place them in a family called Cichlidæ, though they were formerly called Chromidæ. By one name or another, accounts of them may be found in systematic works on fishes.

The first ichthyologist to study these fishes in their habitat was L. Lortet, who made trips to the Holy Land in 1875 and 1880, and in 1883 published an extensive memoir based on the results gained at first hand. Lortet says[1] (p. 106):

"The fishes of the lake of Tiberius, very good to eat, serve as a pasturage for the myriads of crested grebes (*Podiceps cristatus*) and of pelicans. Frequently the grebes snatch at the eyes of the chromids, and with one stroke of their long sharp beaks lift out as cleverly as would a skilful surgeon the two eyeballs and the intro-orbital partition. These unhappy fish, now blind, of which we have taken numerous examples, have thus the entire face perforated by a bloody canal which cicatrises rapidly. It is only the larger individuals who are thus operated on by the grebes, for, not being able to avail themselves of the entire fish, these voracious birds take the precaution to snatch only the morsel of their choice."

The explanation of this we find on his next page, where we are told that these chromid fishes habitually swim at or near the surface of the water.

Canon H. B. Tristram made collections of fishes in the sea of Galilee in 1864, thus antedating Lortet by eleven years, but his book, "The Survey of Western Palestine. The Fauna and Flora of Palestine," was not published until 1884 by the Palestine Exploration Fund.[2] On page 164 he refers to the Chromidæ as found in the lake of Galilee in "amazing multitudes" and continues:

"All these Chromidæ are frequently found with their eyes extracted, and their foreheads pierced by the Grebes, which prey on them, but they seem to thrive perfectly well in spite of this mutilation, and to flourish in a state of absolute blindness."

Of *Chromis tiberiadis*, the most abundant form, Canon Tristram[3] writes:

"I have seen them in shoals of over an acre in extent, so closely packed that it seemed impossible for them to move, and with their dorsal fins above the water, giving at a distance the appearance of a tremendous shower pattering on one spot of the surface of the glassy lake. They are taken both in boats and from the shore by nets run deftly round, and enclosing what one may call a solid mass at one swoop, and very often the net breaks."

Dr. E. W. G. Masterman,[4] in chapter 2, "The Inland Fisheries of Galilee," of his book, "Studies in Galilee" (Chicago, 1909), thus describes the ordinary activities of the fishermen of the lake of Tiberius: ". . . their movements being directed by a man stationed on a point of the shore high above the water, who from his vantage ground is able to detect the presence of a shoal of *musht* (Chromids)." The fishermen, proceeding to the point indicated by the look-out, quickly run a net around the school. However, he tells us that the bottom everywhere is obstructed with large stones, and that the fishermen have continually to dive to free the net. This is possibly if not probably the explanation of Peter's leaping ovebroard.

From the excerpts given, it is plain as to the purport of the proffered explanation, if in the East, where customs change but slowly, we may interpret the past in terms of the present. Fish which go in schools at the surface of the water; fishermen who have not yet struck a school; Jesus on high ground looks over the lake, sees a school and points it out to the fishermen; they cast their nets in the direction indicated and draw them in full to the breaking point.

E. W. Gudger.

American Museum of Natural History
New York City, Sept. 27.

Arabic Chemistry.

i. May I be allowed to direct the attention of those interested in the history of chemistry to an important paper by Prof. Eilhard Wiedemann of Erlangen? It is entitled "Zur Alchemie bei den Arabern" and is published in Heft V. of the "Abhandlungen zur Geschichte der Naturwissenschaften und der Medizin," Erlangen, 1922. It contains a translation of the passage concerning alchemy in the "Kashfu'l-Zunūn" of Hajji Khalifa, with many biographical details of the chemists mentioned. Several of these details have been provided by Prof. Brockelmann, the author of the monumental "Geschichte der arabischen Litteratur," and are entirely new. There is also a list of the most important works (with a few extracts) of the famous Aidamir al-Jildakī († 1361).

It is perhaps ungenerous to offer any criticism of so useful a contribution to chemical history, but I feel that Prof. Wiedemann's explanation of *'ilm al-mīzān* (science of the balance) as *Beziehung und Abwägung des richtigen Masses* should not be allowed to go unchallenged. As I have pointed out in the current number of *Science Progress* (October 1922), the term "Science of the Balance" as applied to alchemy refers to the proper adjustment of the *qualities* of a substance, that is, its hotness and dryness, etc., and is not used in a quantitative sense, even by Al-Jildakī, and certainly not by Jābir ibn Haiyān, who, I believe, originated it.

A work by Al-Jildakī which seems to have escaped the notice of Prof. Wiedemann is "Zahru'l-Kimām," a commentary on an alchemical poem ("Qaṣīdatu'l-Nūniyya") of Abu'l-Aṣba' 'Abdu'l-'Azīz ibn Tammām al-'Irāqī (wrongly named Abu Casba by Berthelot, "La Chimie au Moyen Âge," tome iii. p. 4). Ibn Tammām al-'Irāqī was a contemporary of Al-Jildakī, who thought very highly of him.

ii. Berthelot (*op. cit.* p. 5) says, "Plusieurs des auteurs alchimiques arabes ont été traduits en latin, aux XII^{e} et XIII^{e} siècles, et ces traductions existent en manuscrit dans les grandes bibliothèques d'Europe. Un certain nombre d'entre elles ont même été imprimées . . . dans les collections intitulées *Theatrum chemicum, Bibliotheca chemica* (*etc.*). . . . A côté d'œuvres authentiques, je veux dire réallement traduites ou imitées de l'arabe, telles que la *Turba*, les écrits attribués à Rosinus, Morienus, Avicenne, etc., il en existe d'autres, fabriquées de toutes pièces en Occident, comme les prétendues œuvres des faussaires latins qui ont pris le nom de Géber."

The first part of Berthelot's statement is undoubtedly correct, although Berthelot himself was not able to discover the Arabic texts of any of the works he mentions as of probable Arabic origin.

---

[1] Lortet, L. "Poissons et reptiles du lac Tibériade, etc.," in his "Etudes Zoologiques sur la fauna du lac Tibériade, etc." Archives Museum Histoire Naturelle de Lyon, 1883, vol. 3.

[2] The Palestine Exploration Fund is interdenominational in its organisation and sources of income. It has H.M. King George V. for its patron, and is supported by voluntary subscriptions. Its purpose is the thorough study of the archæology, geology, geography, history, natural history, etc., of Palestine.

[3] Dr. H. B. Tristram, Canon of Durham Cathedral, because of ill-health (lung trouble) lived in Algeria during the winters of 1855–1857. He went to Palestine in 1860 and remained for some years studying the fauna and flora, the resulting data being incorporated in his 455-page quarto volume, the standard work on the natural history of the Holy Land. In 1879 he was nominated for but declined the Anglican Bishopric of Jerusalem. He was the author of seven books on Palestine.

[4] Dr. E. W. G. Masterman is, and has been for a number of years, honorary general secretary of the Palestine Exploration Fund in Palestine.

©1922 Nature Publishing Group

Perhaps, therefore, the following facts will be of interest.

(*a*) In a work entitled "Knowledge Acquired concerning the Production of Gold," an edition of the text of which, with a translation, I have in the press (Geuthner, Paris), the author, Abu'l-Qāsim Muḥammad ibn Aḥmad al-ʿIrāqī, quotes several passages which he attributes to Marianus (Morienus, *supra*), the teacher of K̲hālid ibn Yazīd. Many of these passages occur in the Latin "Liber de Compositione Alchemiae," ascribed to Morienus, which is to be found on pp. 509-519 of vol. i. of Mangeta's "Bibliotheca Chemica Curiosa" (1702).

(*b*) On p. 217 of vol. ii. of the latter treatise is a work entitled "Epistola Solis ad Lunam crescentem," which begins, "In tenuitate enim nimia dabo tibi de pulchritudine mea lumen." This work is strongly Arabic in atmosphere, and is apparently a translation of the "Risālatu'l-shams ila al-hilāl" (Letter of the Sun to the New Moon) written by Abu 'Abdullah Muḥammad ibn Umail at-Tamīmī, who lived in the second half of the third century after the Flight (*ca.* A.D. 900). There is a manuscript of this work, with a commentary by Al-Jildakī, in the British Museum (*Add.* 23,418, xvi.). The Latin line quoted above is an exact translation of the first line of the Arabic poem; I have not yet seen the MS., so that I cannot say whether the agreement between the "Epistola" and the "Risāla" holds throughout.

The second part of Berthelot's statement, namely, that in which he expresses his opinion that Geber's works are forgeries, opens a question too wide for discussion here. I would point out, however, that Berthelot examined less than a dozen of the Arabic works of Jābir ibn Ḥaiyān, and as the latter is said to have written more than 500 books Berthelot was perhaps a little premature. Jābir, in his "Book of Properties" (a manuscript of which is preserved in the British Museum), refers to another book of his called "The Summary," which may possibly be the "Summa" of Geber. There is, moreover, in Mangeta (vol. i. p. 562) a work entitled "Testamentum Gebri"; now a commentator of Jābir's "Book of Mercy" refers to the same author's "Kitāb waṣiyya mautihi," or "The Book of his Last Will and Testament."

Evidence of this and other sorts is gradually accumulating, and it would not surprise me to find that Geber and Abū Mūsā Jābir ibn Ḥaiyān were, as for so many centuries they were held to be, one and the same. E. J. HOLMYARD.

Clifton College, October 9.

On the Occurrence of the Archiannelids, Saccocirrus and Protodrilus, on the South and West Coasts of England.

IN NATURE (vol. 91, pp. 85 and 348) the present writer recorded in 1913 the occurrence—for the first time in England—of abundance of Protodrilus in many situations, and a few Saccocirrus in one situation near Plymouth, and it was shown that both these forms have the curious preference for situations near high-water mark where fresh water trickles through or over the foreshore at low water, but covered by sea water at high tide (*l.c.* 348). Since 1913 the writer has searched for and found Protodrilus in similar situations and in a large number of places between Salcombe and Falmouth, and this year was successful in taking the same animal at two places on the west coast of England, namely, on September 7, near high-water mark where the Wanson (so-called) river runs into the sea at the south end of Widemouth Bay near Bude. (See Ord. Survey Map, 1 in. to mile, river Torridge, Sheet 127, 1H, 47-53), and on September 22 in a similar situation on a beach—formerly well known for shells—at Woolacombe (see O.S. Map, 1 in. to mile, Barnstaple, Sheet 119, 4C, 16-02).

In 1917 and on various occasions since, the writer has also taken large numbers of Saccocirrus (*e.g.*, 80 from a hole in the gravel about 1 ft. by 1 ft. deep in half an hour) on a beach at Portwrinkle in Whitsand Bay (see Ord. Sur. Map, 1 in. to mile, Plymouth, Sheet 148, 5F, 83-15) in a position exactly similar to that described formerly (*l.c.* p. 348). This year a few individuals were also taken in the gravel on the above-mentioned shell-beach at Woolacombe. Protodrilus and Saccocirrus therefore probably occur in all suitable situations in the south-west of England, and may no doubt be recorded—after search in suitable places—from a much more extended area in the British Isles. The specimens of each genus from all localities belong respectively to one species, so far as can be gathered from external characters, namely *Protodrilus flavocapitatus*, and an apparently new and as yet undescribed species of Saccocirrus. It is hoped that the characteristic restless side-to-side movement of the head and anterior region of Saccocirrus may shortly be portrayed by cinematograph.

Living in about the same situation as Protodrilus and Saccocirrus is almost always found the planarian *Gunda ulvae*. This planarian is large and easily found under stones in pools, and therefore serves as a guide in the search for the archiannelids. The apparent positive geotropism of Gunda, which is probably true, is an interesting phenomenon and not well known; if a number of the planarians be taken on a flat stone, they can be made to change direction a large number of times by holding the stone vertically towards the light and turning it repeatedly through an angle of 180°.

The occurrence of the above-mentioned animals only in the peculiar habitat where the water undergoes violent fluctuations in salinity suggests the presence of an undetected special food supply.

J. H. ORTON.

Marine Biological Laboratory,
The Hoe, Plymouth,
October 10.

Origin of the Name of the Genus Masaris.

IN Ed. André, "Species des Hyménoptères d'Europe et d'Algérie," vol. ii. p. 829, it is stated that the derivation of the name "Masaris" is unknown. The first species described under this genus is *M. vespiformis* F., from Egypt; it also occurs in Algeria.

May I suggest that the origin of the name is the Arabic name for Egypt, "Masr" (also used colloquially for its capital, Cairo). As a common noun "masr" means "a fortified place," and its plural is "amsar"; the word is connected with the Hebrew word rendered "Mizraim" in Genesis. It has long seemed to me that this derivation is at least probable, and I should be glad to know if any other has been suggested. E. W. ADAIR.

Turf Club, Cairo, September 26.

FABRICIUS, 1793, "Ent. Syst." ii. p. 283, in founding the genus Masaris, did not indicate any derivation for the name, and L. Agassiz, 1845, "Nomencl. Zool. (Hymenoptera)," masks his inability to give a derivation by the suggestion that Masaris is a proper name. F. A. B.

©1922 Nature Publishing Group